DOCUMENT RESUME

AL 001 032

ED 022 143

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SUBVALIDATION OF LANGUAGE PROGRAMMES, OR HOW TO AVOID THE REINFORCEMENT OF ERRORS.

Pub Date 67
Note-28p.; From Programmed Learning and the Language Laboratory 2, Longmac, London.
Available from-Copyprints, Ltd., 87 Borough High Street, London SE 1.
EDRS Price MF-$0.25 HC-$1.20
Descriptors-*COURSE EVALUATION, EVALUATION METHODS, GERMAN, *LANGUAGE PROGRAMS, *MATERIAL DEVELOPMENT, PREDICTIVE VALIDITY, *PROGRAMED INSTRUCTION, *PROGRAMING PROBLEMS, STIMULUS DEVICES

Lack of agreement among linguists on basic points in language makes it difficult for the programer of self-instructional language texts to make definite statements concerning his subject. Programed instruction has been "too much concerned with the efficiency of the technique but it has not offered sufficient means of checking the validity of the assertions made in the program." In pointing out some of the mistakes which exist in German textbooks, the author feels that there are certain stimulus/response relationships which are particularly difficult to clarify. What is needed is basic linguistic research of a most extensive kind, and to which the language programers will have access. Good programs are needed but the commercial enterprises developing programs cannot be stopped to wait for research. As a solution to this problem, the author suggests that each program should go through a "subvalidation" process--a kind of "ad hoc minimum research." The test subjects in the validation procedure for a "German for non-Germans" program would be non-Germans; the test subjects in the subvalidation procedure for the same program would be Germans. The same applies "mutatis mutandis" for other language programs. (AMM)

Subvalidation of language programmes

or

How to avoid the reinforcement of errors

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ED022143

This article was first published under the title 'Subvalidierung von Sprachprogrammen' in PROGRAMMIERTES LERNEN UND PROGRAMMIERTER UNTERRICHT, Berlin, 1966, no.1, pp.11-16. The present version was revised for publication in BABEL, Journal of the Australian Federation of Modern Language Teachers' Associations, in 1967.

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Efficiency versus veracity

Validation of programmes is concerned with assessing their teaching efficiency. When validation begins, it is taken for granted that the programme contains no factual inaccuracies. The subject matter experts make sure of that.

If the programme is on electronics or chemistry, it is comparatively easy for experts to decide if certain statements are true or false. Language experts (including native speakers), however, often disagree on very basic points or are reluctant to make definite pronouncements.[1] But the programmer needs such pronouncements about the subject he is to programme. This uncertainty and the elusiveness of language make it possible for language textbooks every page of which abounds in mistakes to go on being printed for decades. The harm such textbooks do is great enough but it is kept in bounds by the inefficiency of some conventional teaching methods. The students forget not only (unfortunately) the good German* they have learnt

* This article refers normally to the teaching of German to English students.

but also (thank God) the bad.

Programmed instruction, with its attempts (and means?) to shape a student's linguistic behaviour efficiently and permanently, is a dangerous instrument in such circumstances. If the programme, involuntarily, sets out to teach what is 'bad' German or 'false' German or an unlikely relationship between stimulus and response, then all validation procedures and revisions, by increasing its efficiency, also increase its potential for mischief. (A live teacher if he has an efficient technique but knows his subject matter badly is, of course, similarly dangerous.)

Mistakes in textbooks

Here are a few examples of bad or crooked German taken from English textbooks of German. The following examples are taken from the second volume of a German textbook for English students[2] first published in 1946, new edition published in 1956: When a reminder arrives from the income tax inspector, Herr H. says: '<u>Zum Henker</u> mit solchen Kleinigkeiten!' He then goes 'zu seinem <u>Zylinderbüro</u>'. During a telephone conversation, Herr H. says: 'Was? <u>Allewetter</u>!' Other curses are: 'Sapperment!' and 'Pfui Spinne!' A train

departs and there is 'noch etwas Küssen, Händedrücken und Wehen mit Taschentüchern.' At the wharf, we see a crane 'der alles Gepäck aufnimmt, gerade als ob es nur eine Flaumfeder wäre!'[3] The little boy wants to see the ship's boiler room and when he is given permission, he says: 'Ach, das ist aber wunderbar! Ich werde kreuzbrav sein.' Instead of 'den Hörer abnehmen', we read 'den Hörer heben'. An 18-year-old girl says: 'Meine liebe Mutter hat sich in den Kopf gesetzt, daß ich noch ein richtiger Backfisch bin, und es war erst in zwölfter Stunde, daß sie sich bereit erklärte, mich allein hierher kommen zu lassen'. The cashier at the box-office says: 'Sie können natürlich auch zwei Plätze auf der Galerie haben, wenn Sie wollen,' and the girl customer replies: 'Nein, danke, im Olymp würde ich kaum hören können.' And finally: 'Am Rande des Sees befindet sich ein Spießbürger, der seine Angelsachen auspackt.'

In the preface of another book (1957)[4], very popular as a textbook for undergraduates, we read: 'Dr. ..., Lector in German in the University of ..., has checked every statement in this Manual against his own native "Sprachempfinden" and excellent knowledge of regional variants in usage, and has made many helpful suggestions.' Nevertheless there are many sentences in the exercises which are decidedly

faulty. For instance: 'Alle Jahre, außer dieses, hatten sie einander an jenem Gedenktage gesehen.' - 'Sie antwortete, daß das Haus jetzt in Ordnung war, und daß man es jederzeit besehen könne.' - 'Sie tragen den Mann vom Berg herunter; es gibt viel Schnee und die Wege sind glatt mit Eis.' - 'Wir hängen unsere Mäntel auf den Nagel an der Wand.' - 'Sind Sie für jene Politik der Regierung? - Nein, ich bin sehr dagegen und leide darunter.' - 'Er telefonierte dreimal die Nummer sechs neun vier sieben ...' - 'Peter ist zweimal von seinem Rad gefallen; er erschrak und floh nach Hause.' - 'Ich habe den ganzen Vormittag in der Nähe des Landungsstegs geschwommen; dann bin ich über den Fluß geschwommen, und bin am anderen Ufer gelandet.' (Comma!)

Such mistakes occur in ordinary textbooks, even if, as in the last instance, native speakers of German, and graduates and teachers at that, have collaborated. What should prevent them from finding their way into programmes? Here are some examples from a programme (German for Americans)[5] published by an old and highly respected firm. The programme is apparently well planned and executed methodically. It has been written with the help of subject experts and has been thoroughly validated (but not SUBvalidated):

a. 'Write your answer in the negative.
S: Sitzt ein Mann am Tisch?
R: Nein, kein Mann sitzt am Tisch.'

b. 'Schreiben Sie auf Deutsch.
S: Where is the grandchild playing?
R: Wo spielt das Enkelkind?'
c. 'S: Don't give any girl my picture.
R: Geben Sie keinem Mädchen mein Bild!'[6]
d. 'S: We can catch many fish in that river.
R: Wir können viele Fische in jenem Fluß fangen.'
e. 'S: Will these children fall out of that big bed?
R: Werden diese Kinder aus jenem großen Bett fallen?'

One English publisher has a series of German readers, adapted from books written by German authors (living in Germany) for German children. One would expect that nothing could go wrong in such a set-up. Yet, in one of these books, the illustrator or the person who briefed him, slipped. The sentence 'Ein Mensch lehnte an einer Hausmauer' is illustrated by the outside wall of a 'Blockhaus'.* Such a wall, however, in spite of its being outside, is called a 'Wand'. A 'Mauer' is made of brick or stone or similar materials and is erected by a 'Maurer' not a 'Zimmermann'.

Stimulus/response relationships

Programmed instruction has in the past been far too much concerned with the efficiency of the technique but it has not offered sufficient means

* Fritz Brunner, Aufruhr in Brusada, Oxford University Press, London, 1964, p.51.

of checking the validity of the assertions made in the programme. While it is comparatively easy to recognise some of the mistakes quoted above, there are certain stimulus/response relationships which are much more difficult to clarify.

Let us consider, for instance, German relative clauses. Most tape-recorded exercises (not necessarily programmes) avoid the problem of stimulus/response relationships or have never seen it. Usually the following method is used:

E1 S: Das Mädchen war klatschnaß. Es war ins Wasser gefallen.
R: Das Mädchen, das ins Wasser gefallen war, war klatschnaß.

E2 S: Die Äpfel waren reif. Sie fielen vom Baum.
R: Die Äpfel, die reif waren, fielen vom Baum.

There is no organic stimulus/response relationship in these, invented, examples. Such pairs cannot occur in a dialogue. Such exercises are 'drills', but if anything should be avoided in the language laboratory it is 'drills'. The appearance of the new machines does not suddenly justify the purely mechanical drilling which was rightly despised in modern teaching until recently. It is a barbarism which, unfortunately, is already closely associated with the idea of language laboratory work in the heads of many teachers (advocates and opponents of the

language laboratory) and which obstructs the further spread and full <u>educational</u> use of this new equipment.[7]

There are many types of 'natural' stimuli, and the question is the most unequivocal of them. In an attempt to improve E1 and E2, we reduce the stimuli in E1 and E2 to the ancillary function of 'context prompts' (CP) and introduce a question as direct stimulus; thus:

E3 CP: Das Mädchen war klatschnaß. Es war ins Wasser gefallen.
S: Welches Mädchen war klatschnaß?
R: Das Mädchen, das ins Wasser gefallen war, war klatschnaß.

The context prompt can be shortened, thus:

E4 CP: Das Mädchen war ins Wasser gefallen.
S: Welches Mädchen war klatschnaß?
R: Das Mädchen, das ins Wasser gefallen war, war klatschnaß.

If we compare E1 and E2, we notice that the stimulus/response relationship is not the same in both examples. In E1 the second part of the stimulus becomes relative clause, in E2 the first. (Both transformations are equally unorganic.) The student cannot cope with such exercises intelligently as long as type E1 and type E2 occur at random. When the stimulus is a question, as in E3, the stimulus determines which part of the context prompt becomes main clause and which part subordinate clause: The information contained in the question becomes

main clause, the information elicited by 'Welches?' becomes relative clause. E4 is easier to do than E3 because the two bits of information for main and subordinate clause are no longer supplied in a form suggesting that they are of equal importance (which they are not).[8]

The context prompt is never part of the natural conversational situation. It is as unnatural in E3 and E4 as it is in E1 and E2. The advantage of E3 and E4 is that the speech act itself is elicited in a natural fashion: The natural situation begins <u>after</u> the context prompt has been given. The question arises if the stimulus used in E3 and E4 is natural under all circumstances, or when it is natural and when not. Shouldn't the question be at times: Was für ein Mädchen war klatschnaß? Or rather: Was für ein Mädchen war ins Wasser gefallen? (Answer: Das klatschnasse Mädchen, or: Das Mädchen, das klatschnaß ist.).

In continuous narratives, we often find relative clauses which are not conditioned by a question - at least not by an overt question. Nevertheless all information contained in a text must answer some imaginary or potential readers' questions, and certain peculiarities of German word order can be explained by these imaginary questions. In such texts (and similarly in oral narratives), we often find that relative clauses are inserted

to explain the cause/reason of a state of affairs or of an action (Question: Warum?), and not to offer a choice (Question: Welches?) or to elicit a more precise description (Question: Was für ein?). The following examples from Kafka's 'Das Urteil' show a very loose connection between main and relative clause: 'Außerdem bekommst Du in meiner Braut, die Dich übrigens herzlich grüßen läßt, und die Dir nächstens selbst schreiben wird, eine aufrichtige Freundin...' or 'Der Vater ... las die Zeitung, die er seitlich vor Augen hielt...' Here we cannot ask: 'In welcher/was für einer Braut bekommst Du eine aufrichtige Freundin?' or 'Welche/Was für eine Zeitung las der Vater?' How can one programme such subtle relationships and avoid programming mistakes?

Another example. Assume that the wanted response is 'Als es regnete, zog der Mann seinen Regenmantel an.' The programme (acoustic or graphic) is to teach sentences of this structure by a series of frames all structured in the same way. A slightly different response, 'Der Mann zog seinen Regenmantel an, als es regnete.', is taught by another set of frames using a different question as stimulus. The student learns to differentiate between the two types of stimulus and response by a third set of frames presenting both patterns in a random order.

An audio-lingual programme on 'als'-clauses might look like this:

	A. Context prompt	B. Question Serving as stimulus & meant to determine the structure of the response	C. Pause for student's response	D. Model response confirmation and reinforcement	E. (optional) Pause for student to repeat or copy model response
E5 Structure sample for one set of frames (e.g.40)	Es regnete. Da zog der Mann seinen Regenmantel an. (c)	Was tat der Mann, als es regnete? (d)		Als es regnete, zog der Mann seinen Regenmantel an. (a)	
E6 Structure sample for another set of frames	ditto	Wann zog der Mann seinen Regenmantel an? (e)		Der Mann zog seinen Regenmantel an, als es regnete. (b)	
E7 Structures E5 and E6 mixed at random		Question type E5 and E6 mixed		Model response type E5 and E6 mixed	

Translations of the above examples:

a. When it began to rain, the man put on his raincoat.
b. The man put on his raincoat when it began to rain.
c. It began to rain. (OR: It was raining.) So the man put on his raincoat.
d. What did the man do when it began to rain?
e. When did the man put on his raincoat?

If the student practises each of these sets of frames until he reaches a certain passing score[9] and, possibly, gets some theoretical instruction (programmed) on these structures as well, he will eventually respond to any 'Was tat ..., als ...?' question by <u>beginning</u> his answer with the subordinate clause and to any 'Wann ...?' question by <u>ending</u> with the subordinate clause. We can easily test if this terminal behaviour has been acquired by mixing the frames of the two sets. (In testing, of course, all model responses must be withdrawn.)

While it is certain that the responses in E5, E6 and E7 are possible German responses and that the questions are possible German questions, it is not at all certain that the terminal behaviour we have induced is German behaviour.

The above frames do not just use the questions to <u>elicit</u> certain responses but <u>they assert implicit implicitly that there exists a particular relationship between a certain type of question and a certain type of response</u>. (This type of stimulus in a language programme is part of the subject matter, while stimuli in science programmes are teaching or programming aids.)

The stimulus/response relationship in E5 to E7 is an assertion on a subtle, yet important, point

and the assertion may be wrong, especially in E6. Do Germans really shift the sub-clause after the main-clause in such a case or do they just change the intonation? I think that the relationship I have set out in the sample frames is 'logical' but I feel uneasy about it: perhaps my logic contradicts German usage.

Subvalidation

What can be done to ascertain the facts about structures? To ask a native German directly is of no use.[10] Whatever he may say at first, if you pester him long enough, he is likely to have second thoughts about his original statement. I fancy that I can persuade any German to accept my 'logic' in E5 to E7, especially if I let him do a few trial runs through the programme first. (This does, of course, not apply to more elementary problems of structure. For instance, nobody will be able to persuade a German to accept as correct the sentence 'Ich zum Bahnhof ging um 7 Uhr'.)

Someone may have investigated the particular grammatical problems mentioned, but there are many more such problems and each unsolved or (as happens more frequently) unrecognised problem is dangerous in the hands of an efficient programmer.

The techniques of programmed learning thus force upon us the need for basic linguistic research of a most extensive kind. Innumerable questions have to be investigated and the results made accessible to language programmers.

Meanwhile, shall we not write language programmes? It would only be fair not to, but good programmes are needed and linguists and commercial enterprises cannot be stopped. We must, however, insist that each programme goes through a process of what I will call 'subvalidation'.

Subvalidation is a kind of ad hoc 'minimum research'. While validation assesses the effectiveness of a programme, subvalidation assesses its truth or the validity of its assertions. If a physicist rather than a student of physics performed all the experiments described in a physics programme, we would have more or less an equivalent procedure to the subvalidation of language programmes. The test subjects in the validation procedure for a programme 'German for non-Germans' are non-Germans, the test subjects in the subvalidation procedure for the same programme are Germans. (The same applies, mutatis mutandis, for other languages.)

If a programme section on 'als'-clauses is to be subvalidated, subjects must not be given E5 or E6 because the regular pattern of the sets may influence their linguistic behaviour. The subjects are asked to respond to E7 (mixed structures) both orally and in writing. Model responses must not be given! If the subjects do not produce the expected responses, the programme has to be changed <u>in its subject matter</u> rather than its teaching technique.

Subvalidation also assesses if the programme is easy enough. Native speakers must get all frames (acoustic or graphic) right at the first attempt and without hesitation. Students can, <u>but should not</u>, be drilled to perform linguistic acrobatics that native speakers cannot do.[11]

Stimuli must not be ambiguous. The drawing of a cup must not be mistaken for a tumbler. A drawing to accompany the word 'Dach' (roof) must not be mistaken for a house. A drawing meant to elicit the word 'Kind' (child) must not in fact produce 'Junge' (boy) or 'Mädchen' (girl) or 'Baby' from subvalidation test subjects. Questions must be so phrased that only one correct answer is possible to them. English words and phrases as translation stimuli must have only one correct translation. Subvalidation checks if this is so.

Drawings (etc.) should be shown to test-groups of native speakers and their responses recorded. The pictures must produce the same utterances and reactions in all of them. The pictures must also be tested with English students. They have to respond in English to indicate that they all recognise the object or situation as what it is meant to be. The drawing of a German stove may be passed by German test-subjects as unequivocal, while English children still cannot make out what it is. They will then learn to associate the German word with this particular drawing but not with the idea the drawing represents. (This is a general disadvantage of drawings as stimuli.)[12]

To test if English verbal stimuli are unambiguous and apt to produce only one response, subjects must be used who know English extremely well. For a programme on German these could be German graduates in English and English graduates in German. It would be interesting to see if there are any typical differences in the responses of these two groups. It may be that the German test-subjects, by virtue of the fact that they are graduates (and graduates in English), speak untypical German (as compared to the German the programme aims at). This indicates one of the difficulties of subvalidating programmes which use English stimuli.

Summary

This article has shown the need for extensive linguistic research (and there is no time to waste) lest many students should be sacrificed to, and much time and money be wasted on, programmes which are highly efficient in shaping wrong behaviour. As an immediate measure, the concept of 'subvalidation' has been introduced.

The fact that subvalidation has so far not been considered necessary in science programmes is doubtless regarded as due to some basic differences between science and language as an object of programming. For instance, the peculiar stimulus/response relationship in languages is absent in science programmes.

It is the purpose of this article to provoke further thought on, and discussion of, the problems of subvalidation.[13]

Notes

It seems necessary to stress that I use the word 'programme' as a technical term to mean 'self-instructional programme'. Thus not every tape-recorded exercise for the language laboratory is a programme, nor are teaching aids programmes. Programmes in the narrow sense of the word aim at covering a certain topic without relying on

the teacher to prepare or introduce it or to follow it up. They allow all students to work at their own speed from the beginning to the end of the programme. Because the teacher is largely excluded from such courses or assigned different functions, validation and subvalidation procedures are of paramount importance for programmes, but not for conventional teaching materials.

1. When in 1963 the book 'German for advanced students' by E. P. Dickins was published, an excited correspondence took place in the columns of the TIMES EDUCATIONAL SUPPLEMENT on the question whether or not the expression 'Wenn das Schlimmste zum Schlimmsten kommt' (Dickins, p.62) is correct German. The reviewer of the book had criticised this and other expressions. The correspondence continued for weeks, and the best experts in the country, including Professor L. Forster, contributed.
2. S.W.Wells: Teach yourself more German. E.U.P., London, 1956. Some errors have been corrected in the most recent edition.
3. I know of only one occurrence of 'Zylinder-bureau', namely in Fontane's Effi Briest (1895!), ch.8. In ch.22 of the same novel, we also find 'Noch ein Händedruck, ein Wehen mit dem Tuch, und der Zug setzte sich in Bewegung.' Modern German would have 'Wedeln' or 'Winken'. 'Flaumfeder' occurs in

Keller's 'Der grüne Heinrich' (1853!) vol.4, ch.5, but is similarly uncommon in modern German.

Kurt Tucholsky has beautifully parodised this sort of German in his 'Deutsch für Amerikaner' (1920); e.g. 'Ist jene Automobildroschke ledig? - Darf ich Ihnen meinen lieben Mann vorstellen; nein, dieser hier! - Ich bin sehr froh, Sie zu sehen; wie geht es Ihrem Herrn Stiefzwilling? - Werfen Sie das häßliche Kind weg, gnädige Frau; ich mache Ihnen ein neues, ein viel schöneres. - Wo ist die Schaltung für freie Marken und die Briefschaukel? - Ei, mein Fräulein, könnten Sie sich dazu verstehen, mich durch den Abend zu streifen? - Meinen Frau Gräfin nicht auch, daß dies ein rechtes Scheißwetter sein dürfte? - Jener Funkturm ist niedlich. - Ich spreche schon geflossen deutsch; nur manchesmal breche ich noch etwas Rad.' (In: Kurt Tucholsky: Panther, Tiger & Co., Rowohlt, Hamburg 1954, pp.141ff.)

4. F. J. Stopp, A manual of modern German. University Tutorial Press, London, 1957.

5. E. E. Ellert, L. V. Ellert and M. W. Sullivan: A programmed course in elementary German. (Programme book with tapes) Encyclopaedia Britannica Films Inc., Chicago, 1961.

6. It is very difficult to prove the faultiness of sentences such as this. There are two main criticisms:
   a. Unlike, say, 'The book is on the table', this sentence needs an elaborate contextual justification if one is to understand its significance and meaning at all. Since, in a programme, these sentences follow one another quickly, the student cannot be asked to imagine the not at all obvious situation that would justify the sentence. If such sentences are used in a programme at all, the programmer has to provide the context.
   b. One could try to develop a concept such as 'too great lexical density' or 'overloading' to cope with such sentences. If a natural situation is provided, speakers are more likely to give their information in bits and pieces, focussing more and more sharply as they go along; e.g. 'Remember? I gave you my picture this morning. Now, you may give it to anyone you like, but don't give it (!) to any girl.' Here the lexical density is reduced by anticipating the word 'picture' in the first sentence and replacing it by the less 'weighty' pronoun 'it' in the subsequent ones.

7. It is quite possible to develop programmes which have the character of an educational sport and not of a barrack square. The first step is a rich variety of interesting and organic stimulus/response relationships. Here are some examples from a German programme, which I am developing at the moment. The teaching aim of the first examples is the contrast between 'will' and 'wollen'. In E8 and E9, the stimulus is a question.

E8 Antworten Sie immer mit Ja!
1. Wollen Sie nach Hause gehen? - Ja, ich will nach Hause gehen.
2. Wollen Sie mich am Sonntag besuchen? - Ja, ich will Sie am Sonntag besuchen.
+ 8 further items

E9 In each of the following items, a choice of two things is given to you. Always accept the second.
1. Wollen Sie die neuen Kartoffeln oder die alten? - Ich will die alten.
2. Wollen Sie das rote Kleid oder das gelbe? - Ich will das gelbe.
+ 8 further items

In E8 and E9, the stimulus was 'wollen' and the response 'will'. Now the pupil is to learn to respond to the stimulus 'will' with the response 'wollen'. Moreover he is to practise the question, a skill which is commonly neglected in conventional language teaching and which, in the usual language laboratory exercises, is often 'drilled' in a senseless mechanical manner.

E10 In each of the following items, you will be told about somebody's peculiar intentions. Ask the man if he is serious.
1. Ich will in den Rhein springen. - Wollen Sie wirklich in den Rhein springen?
2. Ich will meinen Hund braten. - Wollen Sie wirklich Ihren Hund braten?
+ 8 further items

By the way, the intonation of the model response shows the genuine tone of surprise, which is then imitated by the student.

Similar exercises treat the contrast between 'kann' and 'können'.

E11 Antworten Sie immer mit Nein!
1. Können Sie Chinesisch? - Nein, ich kann kein Chinesisch.
2. Können Sie von Luft und Liebe leben? - Nein, ich kann nicht von Luft und Liebe leben.
+ 8 further items

E12 In each of the following items, you will be told to do something. Reply that you cannot do it.
1. Essen Sie die Suppe mit der Gabel! - Ich kann die Suppe nicht mit der Gabel essen.
2. Schenken Sie mir das Geld! - Ich kann Ihnen das Geld nicht schenken.
+ 8 further items

E13 In each of the following items, the speaker will state something someone has done. Ask him if he can do the same thing himself.
1. Paul hat ein Auto repariert. - Können Sie auch ein Auto reparieren?
2. Der Minister hat Französisch gesprochen. - Können Sie auch Französisch sprechen?
+ 8 further items

8. A difficulty is caused by the fact that the normal answer to questions is a sentence fragment, not a full sentence. E.g. Wo ist Paul? - In der Schule. / Wann gehen wir spazieren? - Wenn wir gegessen haben. It is in any case advisable to programme the full set of sentence fragments before programming complete sentence structures. The programme on sentence fragments would deal with all paradigmatic contrasts (which are particularly important in a language like German), such as cases, verb endings, use of prepositions, vocabulary, etc. etc. All the stimuli for this programme section could be questions. In the programme section on complete sentence structures, the task would be to assemble the previously learnt sentence fragments. It is not in strict agreement with the principles advocated in this article to use questions as stimuli for full sentence structures. However, until a better type of stimulus has been found for full sentence structures, we may be forced to put up with questions for this purpose. Nevertheless efforts ought to be made to develop some more natural system of teaching full sentence structures. One possibility might be to use graphic programmes for this purpose, as the full sentence structure is a characteristic feature of written rather than spoken language.

9. See my article 'Problems of learning in the language laboratory'; in: AUDIO-VISUAL LANGUAGE JOURNAL, vol.2, no.4, 1964, and vol.3, no.1, 1965 (London). Cf. also the description of the RU scoring system in my article 'Language learning with programmes' (reprinted in this volume).

10. R. Quirk (see note 13) is particularly concerned with diverting the subject's attention from the true nature of the experiment.

11. In his article 'The stimulus-response situation in language learning with special reference to the language laboratory' (in SYMPOSIUM, 1966, pp.25-30, Johannesburg), L. Proctor commends a type of language laboratory exercise which he regards 'as being very useful, especially for revision, but more particularly for what I call consolidation - putting language to use in a completely closed system after the various drills have been practised by the student. This is what is called conversational chaining, or fixed increment response. The student is given a sentence, and then another item. That new item must be incorporated into the sentence, possibly by replacing an existing item, so as to form a

new sentence. I find it particularly effective in French and German, and one which my language laboratory groups find quite difficult. Let's have an example in English. "Peter likes chocolate - Mary: Mary likes chocolate - sweets: Mary likes sweets - prefers: Mary prefers sweets - eats: Mary eats sweets - always: Mary always eats sweets - is eating: Mary is always eating sweets - too many: Mary is always eating too many sweets - Harry: Harry is always eating too many sweets - do you think?: do you think Harry is always eating too many sweets? - my mother: do you think my mother is always eating too many sweets? - peaches:" etc. This is in fact the substitution table run riot.' (p.29) Proctor's last sentence sounds like a condemnation of the exercise; but Proctor means it in praise. One also wonders why this exercise should be '<u>particularly</u> effective in French and German'. Assuming it were effective (and what does 'effective' mean in concrete terms?), why should it be less effective in the learning of other languages, e.g. in courses of English or Africaans as a second language?

12. Subvalidation experiments with a recent audio-visual/audio-lingual course of German

for English children produced, for instance, the following responses to pictures which were to have a one-to-one correspondence with German words:

Expected word (the German for...)	Actual response	Native language of informant
ruler	thermometer	German
grass	field/cow	English
chalk	candle	English
sky	clouds/birds	English

In a German textbook of English that relies exclusively on pictures for the introduction of the early vocabulary the picture of a should-be nest produced the response 'stone' from an English informant.

13. Since writing this article in 1964, a number of experiments of a parallel nature have come to my attention. All these are quoted in the latest study of the subject, R. Quirk, 'Investigating linguistic acceptability', Mouton, The Hague, 1966. These experiments have sprung from Chomsky's efforts to develop 'explicit grammars'. They aim at assessing whether or to what extent an utterance is acceptable to a native speaker, acceptability being one of the main factors having a bearing on the grammaticality of an

utterance. Ultimately, these experiments should lead to a validation of grammars just as subvalidation procedures should contribute to the total validation of teaching programmes. The referee in both cases is the native speaker. But whereas the acceptability experiments are largely concerned with eliciting from the native speaker some direct or indirect judgment <u>about</u> the utterance under investigation, subvalidation aims at eliciting the utterance itself and establishing which situational stimulus would be suitable for the purpose. Utterances that have 'passed' the tests devised by R. Quirk can be considered partly subvalidated; Quirk's tests do, however, not aim at investigating stimulus/response relationships (with which I am particularly concerned).